

## **AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) A head-tracking method for detecting three-dimensional movement of the head using three axes as points of reference, an x-axis extending in a right-to-left direction of the head, a y-axis extending in a front-to-back direction of the head, and a z-axis perpendicularly traversing a horizontal surface of the head, the method comprising:

operating a reset switch on a head-tracking device, a position of the head when the reset switch is operated being set as a reference position;

calculating a yaw angle from an integral value of an output of a gyro sensor, the yaw angle representing an angle rotating about the z-axis;

calculating both a pitch angle and a roll angle from an output of a two-axis tilt sensor, the pitch angle being formed between the z-axis and the y-axis, and the roll angle being formed between the z-axis and the x-axis; [[and]]

correcting the yaw angle calculated from the output of the gyro sensor using the calculated pitch angle and roll angle; and

detecting the movement of the head from the reference position based on the outputs of the gyro sensor and the two-axis tilt sensor.

2. (Previously Presented) The head-tracking method according to claim 1, wherein a period for calculating the yaw angle from the output of the gyro sensor is shorter than a period for calculating the pitch angle and the roll angle from the output of the tilt sensor.

3. (Cancelled)

4. (Currently Amended) A head-tracking device for detecting three-dimensional movement of the head using three axes as points of reference, an x-axis extending in a right-to-left direction of the head, a y-axis extending in a front-to-back direction of the head, and a z-axis perpendicularly traversing a horizontal surface of the head, comprising:

a reset switch for setting a reference position;

a gyro sensor for detecting a yaw angle, the yaw angle representing an angle rotating about the z-axis;

a two-axis tilt sensor for detecting both a pitch angle and a roll angle, the pitch angle being formed between the z-axis and the y-axis, and the roll angle being formed between the z-axis and the x-axis; and

calculation means for calculating the yaw angle from an integral value of an output of the gyro sensor, and the pitch angle and the roll angle from an angular velocity output of the tilt sensor,

wherein the calculation means performs a correction of the yaw angle calculated from the output of the gyro sensor using the calculated pitch angle and roll angle, and

wherein a position of the head when the reset switch is operated is set as the reference position.

5. (Previously Presented) The head-tracking device according to claim 4, wherein, with respect to the calculation means, a period for calculating the yaw angle from the output of the gyro sensor is shorter than a period for calculating the pitch angle and the roll angle from the output of the tilt sensor.

6. (Cancelled)